

CLAIMS

1. A booster circuit for a pre-drive circuit that drives a drive circuit of a brushless direct current single-phase motor characterized in that,

the drive circuit includes series connectors of two main switching elements which are a pair of transistors, and a motor coil interconnected between junctions of the two main switching elements of the series connectors,

the booster circuit provides ON/OFF power flow control to the motor coil which is connected between a direct current power supply and a ground of the drive circuit, wherein ON/OFF control of the respective main switching elements is prescribed at any timing from any direction, and wherein the booster circuit requires a control voltage that exceeds a power supply voltage to turn ON the two main switching elements of the direct current power supply side,

the two main switching elements includes a first transistor that turns ON when a first end side of the motor coil reaches a higher electric potential than another end side of the motor coil and charges a first capacitor from the direct current power supply via a first diode, a second transistor that turns ON when the another end side of the motor coil reaches a higher electric potential than the

first end side of the motor coil and mutually conducts electricity between a terminal at a connection between the first transistor and the first capacitor and the direct current power supply to increase the electric potential of a junction of the first capacitor and the first diode, and a second capacitor that receives an electric charge and is charged from the first capacitor via a second diode when the second transistor turns ON and is connected between said second diode and a switch terminal of the direct current power supply side of the second transistor,

wherein boost voltage output is obtained from the connection path of the second diode and the second capacitor.

2. The booster circuit according to claim 1, further characterized in that a diode faces the forward direction with respect to control terminals of the respective boost control switching elements and a resistor parallel circuit are respectively inserted and connected between the first end side of the motor coil and the control terminal of the first transistor and between the another end side of the motor coil and the control terminal of the second transistor.

3. The booster circuit according to claim 1, wherein respective voltage restricting elements are connected between respective control terminals of the first and second transistors and a ground side switch terminal.

4. The booster circuit according to claim 2, wherein respective voltage restricting elements are connected between the respective control terminals of the first and second transistors and a ground side switch terminal.

5. The booster circuit according to claim 3, wherein the voltage restricting elements are Zener diodes.

6. The booster circuit according to claim 4, wherein the voltage restricting elements are Zener diodes.

7. The booster circuit according to claim 1, further characterized in that a filter circuit is inserted into the boost voltage output path from the connection path between the second diode and the second capacitor.

8. The booster circuit according to claim 2, further characterized in that a filter circuit is inserted into the

boost voltage output path from the connection path between the second diode and the second capacitor.

9. The booster circuit according to claim 1, wherein a base of the first transistor is connected at a junction of the main coil and a first series connector of the drive circuit via a first parallel resistor circuit.

10. The booster circuit according to claim 9, further comprising a first Zener diode connected between the base and emitter of the first transistor.

11. The booster circuit according to claim 1, wherein a base of the second transistor is connected at a junction of the main coil and a second series connector of the drive circuit via a second parallel resistor circuit.

12. The booster circuit according to claim 11, further comprising a second Zener diode connected between the base and emitter of the second transistor.